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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yigal Bejerano

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EXAMINER

TORRES, MARCOS L

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/788,460	Applicant(s) BEJERANO ET AL.	
	Examiner MARCOS L. TORRES	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-9,13-18 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-9,13-18 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10-30-08 have been fully considered but they are not persuasive.
2. Regarding applicant's arguments that Menzel does not disclose or suggest "maximization of a lower bound of a slot-to-user ratio"; the specification in par. 0037 maximization of a lower bound of a slot-to-user ratio "seeks to assign as many slots to each AP as possible, giving each AP the opportunity to transmit in proportion to the number of users associated with the AP", this limitation is disclosed by Menzel in the previously cited section of col. 4 and 5.
3. Also applicant asserts: "Further, Menzel's general statement that its time slot allocation is "load-dependent" without saying more, reveals little to one skilled in the art. Said another way, there is nothing in Menzel to suggest to the skilled artisan that its allocation methodologies include consideration of a slot-to-user ratio, much less the maximization of a lower bound of such a ratio as in the claims of the present invention.", as shown in the prior paragraph, assigning as many slot to each AP in proportion to the number of user is "load-dependent" as admitted by the applicant. Also, please note that the term "maximization of a lower bound of a slot-to-user ratio" is not being defined in the claims; thereby the terminology may have different interpretations.
4. The rest of the arguments, they fall for the same reasons as shown in paragraph 2 and 3 above. The current rejection in record remains.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 5-9, 13-18 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari US 20050169222A1 in view of Benveniste US 20060039281A1 and further in view of Menzel 6504837.

As to claim 1, Ayyagari discloses the method for providing a relative level of fairness and Quality of Service (QoS) [see par. 0015] comprising: identifying a set of non-interfering access points (see par. 0017); dividing the CFP into one or more slots (see fig. 2,4,6; par. 0042, 0049, 0021); assigning one or more of the so divided slots to an access point which is allowed to transmit based on the number of users associated with the access point (see fig. 2, 4, 6; par. 0049, 0071); assigning the so divided slots to access points (see fig. 2, 4, 6; par. 0030,0045-0049,0094-0101; allowing only the identified set of non-interfering access points to transmit during a Contention-Free Period (CFP) slot; and allowing all access points to transmit after the end of the CFP (see par. 0042-0057, 0074-0077). Ayyagari does not specifically disclose a wireless local area network (WLAN) network. In an analogous art, Benveniste discloses the method for providing a relative level of fairness and Quality of Service (QoS)[see par. 0032] in a wireless local area network (WLAN) network [see par. 0012] comprising: identifying a set of non-interfering access points (see par. 0017); allowing only the identified set of non-interfering access points to transmit during a Contention-Free Period (CFP) slot; and allowing all access points to transmit after the end of the CFP (see par. 0108). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to use in a WLAN system the non-interfering techniques to avoid collisions and increase communication quality. The previous references fail to disclose to

maximize a lower bound of a slot-to-user ratio. In another analogous reference, Menzel discloses assigning the so divided slots to access points which share time slots which are allocated by load thereby maximize a lower bound of a slot-to-user ratio (see col. 4, line 64 – col. 5, line 50). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to combine this teaching to the modified Ayyagari and Benveniste system to increase the communication quality and increase bandwidth by managing the resources according to the loads

As to claim 5, Ayyagari discloses the method further comprising: assigning at least one so divided slot to each access point (see fig. 2, 4, 6; par. 0049).

As to claim 6, Ayyagari discloses the method further comprising controlling each access point making up the identified set of non-interfering access points to ensure each access point begins and ends a transmission during the CFP slot (see fig. 2, 4, 6; par. 0049).

As to claim 7, Ayyagari discloses the method further comprising: transmitting an instruction to initiate transmission of one or more beacon messages to prevent users associated with access points from transmitting prior to the beginning of the CFP (see par. 0045-0049).

As to claim 8, Ayyagari discloses the method further comprising: transmitting an instruction to initiate transmission of one or more beacon messages such that no two adjacent APs in an interference graph may send beacon messages substantially simultaneously (see par. 0045-0049).

As to claim 17, Ayyagari discloses the system further comprising one or more sets of non-interfering access points, each set of access points operable to: transmit during at least one Contention-Free Period (CFP) slot; and transmit after the end of the CFP (see par. 0045-0049).

Regarding claims 9, 13-16, 18 and 22-25 they are rejected for the same reasons already considered in claims 1 and 5-8 shown above.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCOS L. TORRES whose telephone number is (571)272-7926. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-252-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/
Supervisory Patent Examiner, Art Unit 2617

/Marcos L Torres/
Examiner, Art Unit 2617